

IN THE DRAWINGS:

Amend the drawings, as indicated on the attached Replacement Sheets of Figs. 1, 14, and 16, as follows:

Figure 1:

Add the label "sensor " to the blocks 11a, 11b and 11c;

Add the label "communication unit" to block 12;

Add the label "calculating unit" to block 13;

Add the label "joint actuator" to block 14;

Add the label "image processing unit" to block 15;

Add the label "image generating unit" to block 15a;

Add the label "nimbus generating unit" to block 15b;

Add the label "combined image generating unit" to block 15c;

Add the label "storage unit" to block 16;

Add the label "communication unit" to block 17;

Add the label "sensor" to blocks 21a and 21b;

Add the label "communication unit" to block 22;

Add the label "calculating unit" to block 23;

Add the label "display unit" to block 24; and

Add the label “control unit” to block 25.

Figure 14:

Add the label "sensor " to the blocks 11a, 11b and 11c;

Add the label "communication unit” to block 12;

Add the label “calculating unit” to block 13;

Add the label “joint actuator” to block 14;

Add the label “image processing unit” to block 15;

Add the label “storage unit” to block 16;

Add the label “communication unit” to block 17;

Add the label “sensor” to blocks 21a and 21b;

Add the label "communication unit” to block 22;

Add the label “calculating unit” to block 23;

Add the label “display unit” to block 24;

Add the label “control unit” to block 25;

Add the label “communication unit” to block 31;

Add the label “storage unit” to block 32; and

Add the label “control unit” to block 33.

Figure 16:

Add the label "sensor " to the blocks 11a, 11b and 11c;

Add the label "communication unit" to block 12;

Add the label "calculating unit" to block 13;

Add the label "joint actuator" to block 14;

Add the label "image processing unit" to block 15;

Add the label "storage unit" to block 16;

Add the label "communication unit" to block 17;

Add the label "sensor" to blocks 21a and 21b;

Add the label "communication unit" to block 22;

Add the label "calculating unit" to block 23;

Add the label "display unit" to block 24; and

Add the label "control unit" to block 25.

REMARKS

In light of the above amendatory matter and remarks to follow, reconsideration and allowance of this application are respectfully requested.

The application was filed with claims 1-26. Claims 27 and 28 have been added. Accordingly, claims 1-28 are presented for consideration.

The specification and abstract have been amended to correct typographical & grammatical errors. It is submitted that no new matter has been added.

The drawings were objected to because the boxes of Figures 1, 14 and 16 do not have descriptive labels. Attached hereto are replacement sheets containing revised Figures 1, 14 and 16 with descriptive labels. It is submitted that no new matter has been added. It is requested that the objection to the drawings be withdrawn.

Claims 1-8, 11-15, 18-22 and 25 were rejected under 35 U.S.C. 102(b) as being anticipated by the publication "Evaluation of Artificial Reality: Chapter 1" (hereinafter "Artificial Reality publication"). As discussed below, it is submitted that the claims are not anticipated by this reference.

In the Office Action, the Examiner asserts that display CG in the Artificial Reality publication "corresponds" to the nimbus generated by the invention recited in applicant's claims. Applicant respectfully submits that the Artificial Reality publication does not disclose applicant's claimed generated nimbus. Further, it is submitted that the Artificial

Reality publication does not disclose applicant's claimed generating of a combined image combining the computer graphics and the nimbus image.

In particular, claim 1 recites (and the other independent claims also recite or similarly recite) "a nimbus generating device for generating a nimbus image around a periphery of the computer graphics." In the application as filed, the term "nimbus" is defined as "a light for hiding a displacement between the humanoid robot 1 and the computer graphics 40." (paragraph 0079 in published application). Thus, in addition to the humanoid robot and the computer graphics, additional light is provided in the image, such additional light constituting the recited "nimbus."

In the Artificial Reality publication, it is disclosed that "the size of the displayed CG is increased larger than the actual robot" (page 18). That is, a human image generated by the computer graphics is increased beyond the size of the actual robot to prevent the user from seeing positional and other types of errors. First, it is submitted that increasing the size of the generated human image, as described in the Artificial Reality publication is not the same as the claimed invention's generating of "a nimbus image around a periphery of the computer graphics." and then "generating a combined image combining the computer graphics and the nimbus image" (as recited in claim 1). In the present invention, the computer graphics (e.g., the generated human image) is distinct from the generated nimbus, whereas they are not distinct in the system described in the Artificial Reality publication. Moreover, since the final image in the Artificial Reality publication is generated by increasing the size of the generated human image, this reference does not utilize (nor disclose) applicant's claimed

generating of a nimbus image and further does not disclose applicant's claimed combining of the computer graphics and the nimbus image. Thus, the Artificial Reality publication does not anticipate applicant's claimed invention.

Second, it is further submitted that applicant's claimed invention is not obvious in view of the teachings set forth in the Artificial Reality publication. In other words, generating a nimbus as recited in the present application and then combining the generated nimbus with the computer graphics is not obvious, for the reasons discussed below, in view of the disclosure in the Artificial Reality publication.

In particular, it is submitted that increasing the size of the displayed computer graphic is a disadvantageous technique since the size of the generated and enlarged graphic will be out-of-proportion as compared to surrounding (non-computer generated) structures, whereas the present application does not encounter such a shortcoming. For example, if the enlarged generated graphic is disposed only over the robot's face, then the robot's face will be disproportionately large as compared to the robot's body. As another example, if the enlarged generated graphic is disposed over the entire robot, then the enlarged image (showing a person's face and body) will be disproportionately large as compared to an actual person who may be standing next to the robot. The present invention, on the other hand, does not increase the size of the computer graphic and thus does not encounter this problem. Hence, in light of the above distinctions between the present invention and the technique described in the Artificial Reality publication, it is submitted that the techniques are not equivalent and, more importantly, that it would not have been obvious to modify the system

described in the Artificial Reality publication to utilize applicant's claimed nimbus generating device and applicant's claimed combined image generating device.

In view of the foregoing, independent claims 1, 2, 3, 4, 11, 12, 18, 19 and 25 are not anticipated by the Artificial Reality publication. Accordingly, it is requested that the rejection of claims 1, 2, 3, 4, 11, 12, 18, 19 and 25 under 35 U.S.C. 102(b) be withdrawn.

Since claims 5-8, 13-15 and 20-22 depend from one or more of the independent claims, the foregoing discussion is equally applicable to claims 5-8, 13-15 and 20-22 and, thus, it is requested that the rejection of claims 5-8, 13-15 and 20-22 be withdrawn.

Claims 9, 16 and 23 were rejected under 35 U.S.C. 103(a) as being unpatentable over the Artificial Reality publication in view of Yuasa et al. (U.S. patent 6,184,888) (hereinafter "Yuasa"). Since claims 9, 16 and 23 depend from one or more of the aforementioned independent claims in the application, and since Yuasa does not disclose the aforementioned deficiencies of the Artificial Reality publication, the foregoing discussion with respect to the independent claims is equally applicable to claims 9, 16 and 23. Accordingly, it is requested that the rejection of claims 9, 16 and 23 under 35 U.S.C. 103(a) be withdrawn.

Claims 10, 17, 24 and 26 were rejected under 35 U.S.C. 103(a) as being unpatentable over the Artificial Reality publication. Since claims 10, 17, 24 and 26 depend from one or more the aforementioned independent claims in the application, the foregoing discussion with respect to the independent claims is equally applicable to claims 10, 17, 24 and 26.

Accordingly, it is requested that the rejection of claims 10, 17, 24 and 26 under 35 U.S.C. 103(a) be withdrawn.


Moreover, it is submitted that the particular features recited in claims 10, 17, 24 and 26 are not obvious in view of the Artificial Reality publication. In particular, claim 10 recites (and claims 17, 24 and 26 also recite or similarly recite) “the computer graphics have a lacking area for showing the observer a second actual object having a part which exists on the observer side than the actual object, and wherein said nimbus generating device also generates a nimbus image around a periphery of the lacking area.” In the office action, the Examiner asserts that it would have been obvious to modify the Artificial Reality publication to provide such a feature. Contrary to the Examiner’s assertions, it is submitted that it would not have been obvious to modify the system disclosed in the Artificial Reality publication in the manner proposed by the Examiner. Figure 18 of the drawings in the present application shows an exemplary situation in which the humanoid robot is holding an object and, as set forth in claims 17, 24 and 26, a so-called “lacking area” is provided over the object so that it can be seen by the user (see paragraphs 124 and 125 of the application (as published)). This object may be chocolate as mentioned in the specification or another object. First, it is submitted that there is no suggestion or motivation in the Artificial Reality publication for the modification to be made. Simply, since this publication is silent with respect to this feature of applicant’s claimed invention, it is not obvious to make the modification. Second, one would actually be disinclined to make the modification since the enlarged computer graphic would be disproportionately large in relation to the object being held. If the object is, for

example, a pair of glasses, then the pair of glasses would appear to be quite small as compared to the size of the humanoid image portrayed by the computer graphic in the system disclosed in the Artificial Reality publication. In fact, any object would appear very small since the computer graphic has been enlarged. Thus, it is submitted that one of ordinary skill in the art would not have found it obvious to create applicant's claimed "lacking area" for showing a second actual object (where the exemplary robot is the first actual object). Accordingly, dependent claims 17, 24 and 26 are further patentably distinct and unobvious over the Artificial Reality publication.

New claims 27 and 28 are presented. Claims 27 and 28 depend from independent claims 18 and 19, respectively, and recite that the "means for generating a nimbus image measures a velocity of the actual object and generates the nimbus image having a thickness sufficient to prevent the actual object from being seen protruding from the periphery of the computer graphics in accordance with the measured velocity." Support for new claims 27 and 28 is set forth in the application as filed in paragraphs 88 through 100 (referring to the U.S. published application). It is noted that the Artificial Reality publication clearly provides that the amount of enlargement of the image is fixed, as discussed in page 18 of the reference. The allowance of new claims 27 and 28 is solicited.

In view of the foregoing, reconsideration and allowance of this application are respectfully requested.

Respectfully submitted,

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